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Title AFTERBODY-NOZZLE DRAG CHARACTERISTICS OF LCA-KAVERI CONFIGURATION

Author(s) N.B.MATHUR

Division EXPERIMENTAL AERODYNAMICS

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Abstract In the present investigation (Phase-II) afterbody-nozzle flow simulation studies were carried out with the three nozzles corresponding to reheat, dry and intermediate operating conditions for the LCA-Kaveri configuration. Experiments were carried out in the freestream Mach number range of 0.6 to 1.6 and jet pressure ratio of 1 to 8. The jet at the nozzle exit was sonic throughout these experiments. Detailed pressure measurements were carried out on an axisymmetric version of LCA afterbody with the above three nozzle configurations in the 0.3m trisonic wind tunnel. Afterbody pressure drag was obtained from the numerical integration of the afterbody static pressures.

Comparison of afterbody pressure drag characteristics of LCA-Kaveri and LCA-CTX configurations show that the afterbody drag level of LCA-Kaveri nozzle configuration is about 20-30 percent higher than that of LCA-CTX afterbody configuration.